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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

ATTORNEY DOCKET NO. AUS920010385US1

In re Application of: **Dawkins et al.**	§	
	§	
	§	Examiner: **Unknown**
	§	
Serial No. **09/903,936**	§	Group Art Unit: **2122**
	§	
Filed: **July 12, 2001**	§	
	§	
For: **Operating System Debugger Extensions For Hypervisor Debugging**	§	
	§	

LETTER TO THE OFFICIAL DRAFTSMAN

Assistant Commissioner of Patents
Washington, D.C. 20231

Sir:

Submitted herewith are formal drawings (4 sheets) for the above-identified application.

Respectfully submitted,

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I hereby certify this correspondence is being deposited with the United States Postal service as First Class mail in an envelope addressed to: Assistant Commissioner of Patents, Washington, D.C. 20231

on 10-08-01 by Dell Whitton

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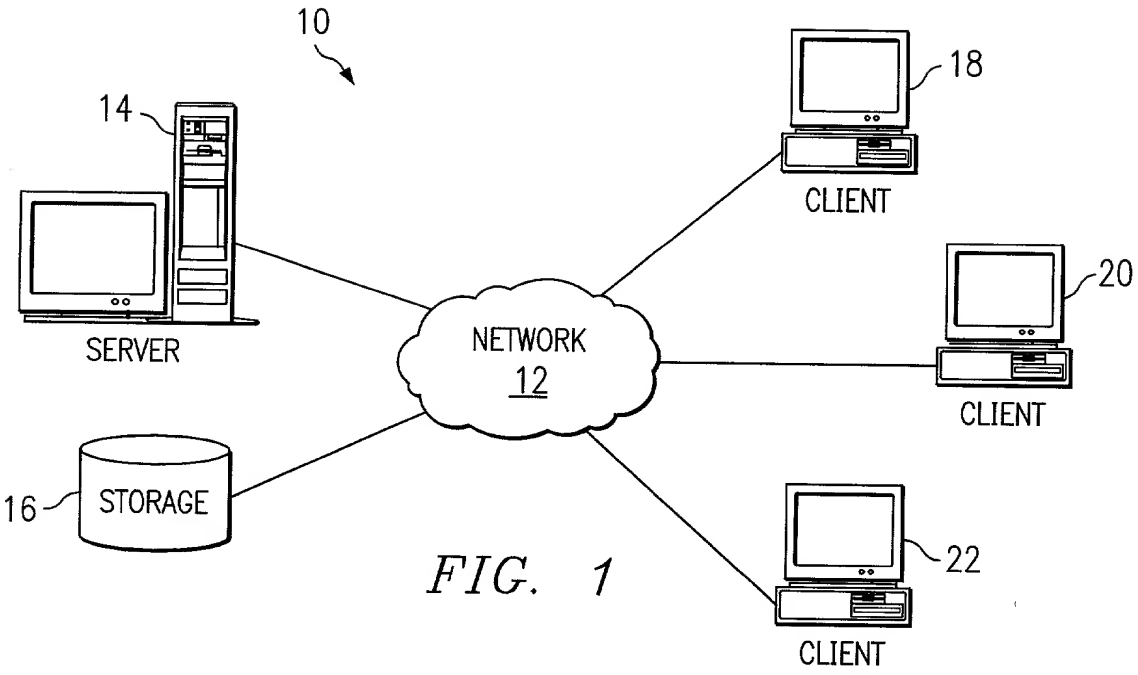

10
14
SERVER
18
CLIENT
20
CLIENT
NETWORK
12
16
STORAGE
22
CLIENT

FIG. 1

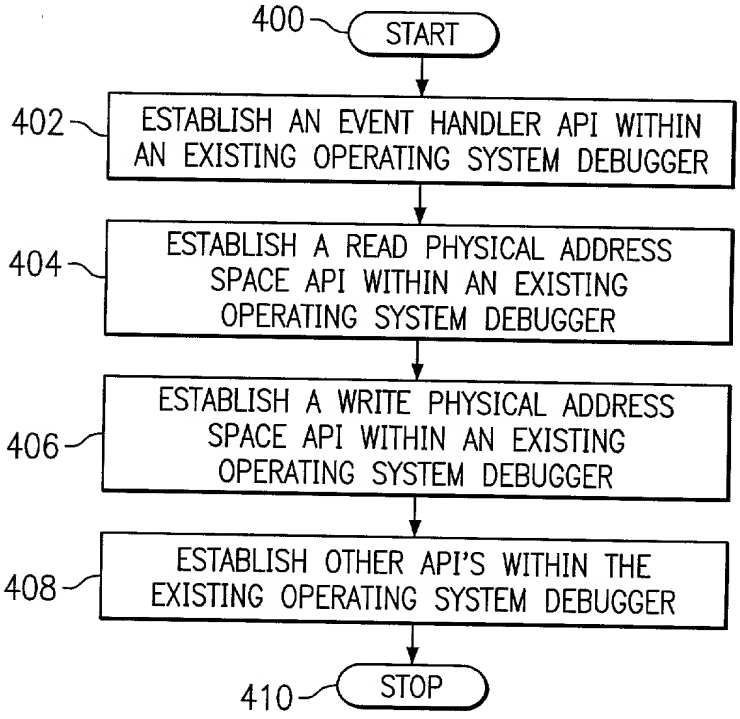

400
START
402
ESTABLISH AN EVENT HANDLER API WITHIN AN EXISTING OPERATING SYSTEM DEBUGGER
404
ESTABLISH A READ PHYSICAL ADDRESS SPACE API WITHIN AN EXISTING OPERATING SYSTEM DEBUGGER
406
ESTABLISH A WRITE PHYSICAL ADDRESS SPACE API WITHIN AN EXISTING OPERATING SYSTEM DEBUGGER
408
ESTABLISH OTHER API'S WITHIN THE EXISTING OPERATING SYSTEM DEBUGGER
410
STOP

FIG. 4

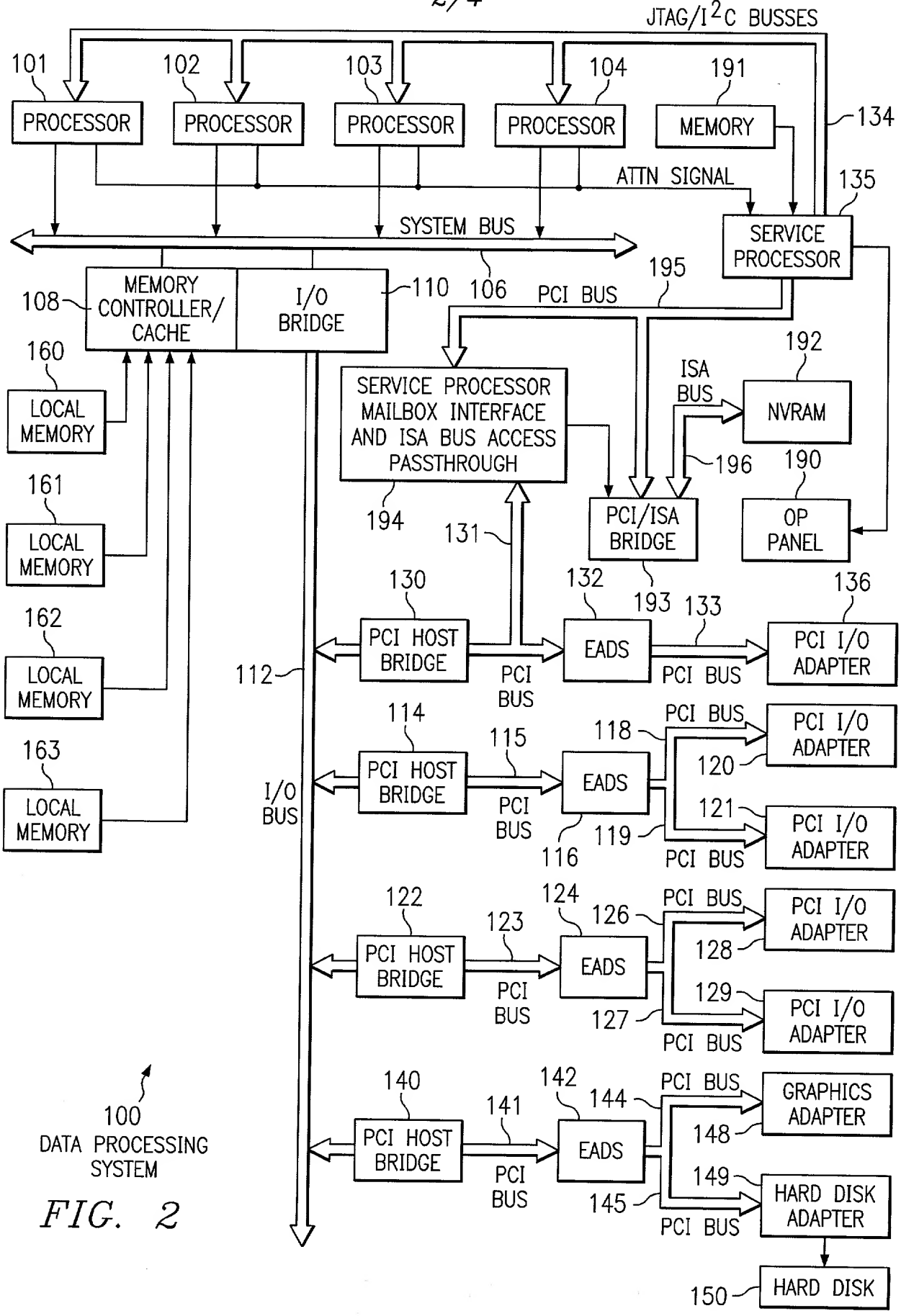

JTAG/I2C BUSSES
101
102
103
104
191
PROCESSOR
PROCESSOR
PROCESSOR
PROCESSOR
MEMORY
134
ATTN SIGNAL
135
SYSTEM BUS
SERVICE PROCESSOR
195
108
MEMORY CONTROLLER/ CACHE
I/O BRIDGE
110
106
PCI BUS
192
160
ISA BUS
SERVICE PROCESSOR MAILBOX INTERFACE AND ISA BUS ACCESS PASSTHROUGH
NVRAM
LOCAL MEMORY
196
190
161
194
131
PCI/ISA BRIDGE
OP PANEL
LOCAL MEMORY
130
132
193
133
136
162
PCI HOST BRIDGE
EADS
PCI I/O ADAPTER
LOCAL MEMORY
112
PCI BUS
PCI BUS
114
PCI BUS
118
163
115
PCI I/O ADAPTER
PCI HOST BRIDGE
EADS
120
LOCAL MEMORY
I/O BUS
PCI BUS
121
PCI I/O ADAPTER
119
116
PCI BUS
122
124
PCI BUS
126
123
PCI I/O ADAPTER
PCI HOST BRIDGE
EADS
128
PCI BUS
129
PCI I/O ADAPTER
127
PCI BUS
140
142
PCI BUS
144
GRAPHICS ADAPTER
141
PCI HOST BRIDGE
EADS
148
PCI BUS
149
HARD DISK ADAPTER
145
PCI BUS
HARD DISK
150
100
DATA PROCESSING SYSTEM

FIG. 2

FIG. 3

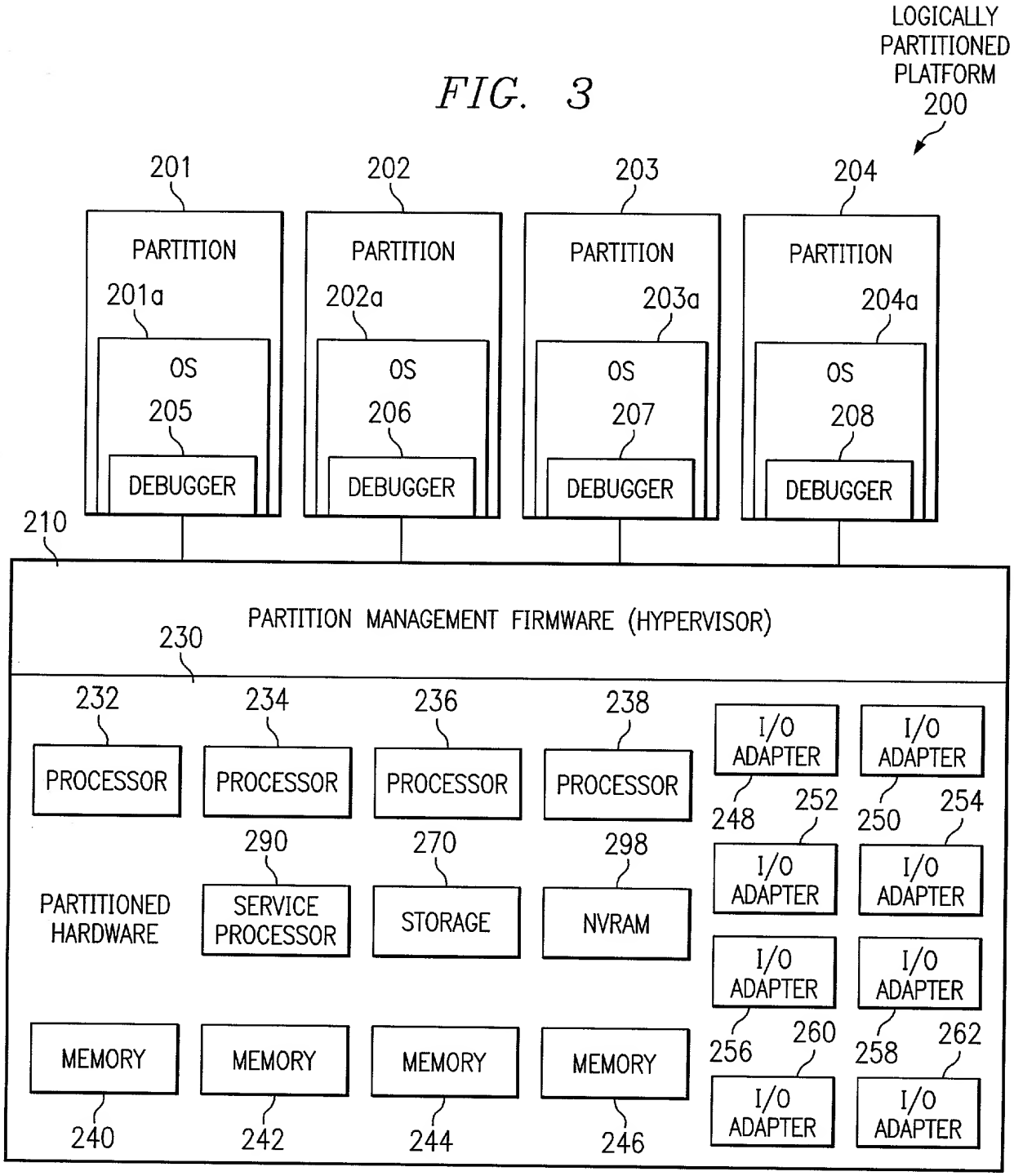
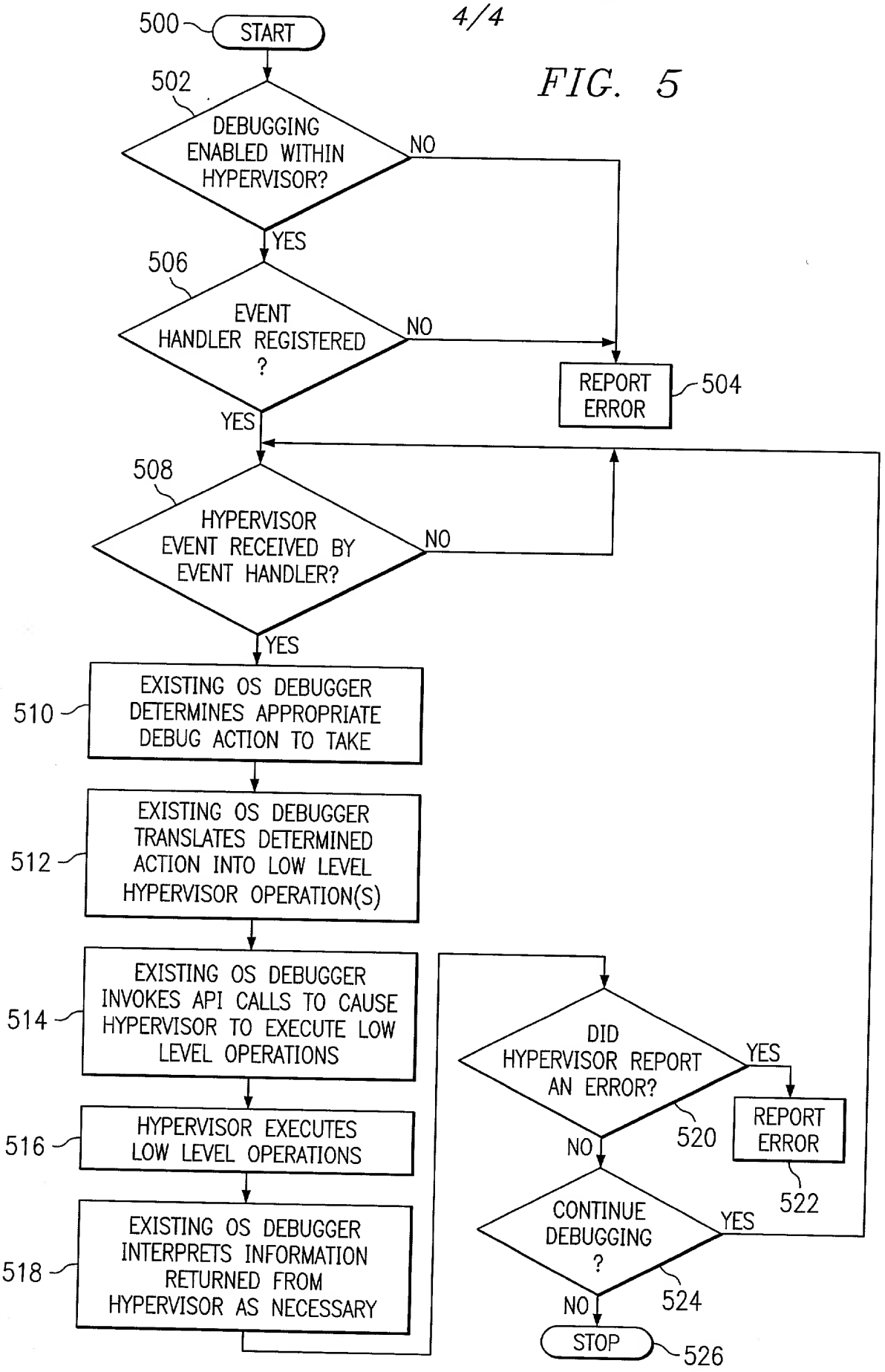

LOGICALLY PARTITIONED PLATFORM
200
201
202
203
204
PARTITION
201a
202a
203a
204a
OS
205
206
207
208
DEBUGGER
210
PARTITION MANAGEMENT FIRMWARE (HYPERVISOR)
230
232
234
236
238
PROCESSOR
I/O ADAPTER
248
250
252
254
256
258
260
262
290
270
298
PARTITIONED HARDWARE
SERVICE PROCESSOR
STORAGE
NVRAM
MEMORY
240
242
244
246

FIG. 5


500
START
502
DEBUGGING ENABLED WITHIN HYPERVISOR?
NO
YES
506
EVENT HANDLER REGISTERED ?
NO
REPORT ERROR
504
YES
508
HYPERVISOR EVENT RECEIVED BY EVENT HANDLER?
NO
YES
510
EXISTING OS DEBUGGER DETERMINES APPROPRIATE DEBUG ACTION TO TAKE
512
EXISTING OS DEBUGGER TRANSLATES DETERMINED ACTION INTO LOW LEVEL HYPERVISOR OPERATION(S)
514
EXISTING OS DEBUGGER INVOKES API CALLS TO CAUSE HYPERVISOR TO EXECUTE LOW LEVEL OPERATIONS
516
HYPERVISOR EXECUTES LOW LEVEL OPERATIONS
518
EXISTING OS DEBUGGER INTERPRETS INFORMATION RETURNED FROM HYPERVISOR AS NECESSARY
DID HYPERVISOR REPORT AN ERROR?
YES
520
REPORT ERROR
522
NO
CONTINUE DEBUGGING ?
YES
524
NO
STOP
526